

REMARKS

Reconsideration of this application as amended is respectfully requested. Claims 1-17, 20 and 22 have been amended, and claims 18, 19 and 21 have been cancelled. Accordingly, claims 1-17, 20 and 22 are again presented for the Examiner's consideration in view of the foregoing amendments and the comments which follow.

Initially, applicant has submitted herewith a substitute specification in order to present a clear and understandable description of the present invention and to correct minor grammatical and typographical errors therein. Applicant submits that none of the amendments to the specification add any new matter to the application, and that these amendments therefore are clearly enterable.

Applicant has also submitted herewith a revised abstract in a form more appropriate to U.S. practice. Applicant submits that no new matter was added to the application by the revisions to the abstract, and that these revisions are therefore clearly enterable.

In the Official Action, claims 5, 6, 8, 10, 12 and 16 were objected to as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. Applicant has amended claims 5, 6, 7, 8, 10, 12 and 16 to depend from a single claim. Accordingly, applicant submits that the Examiner's objection to these claims has been overcome.

Claims 9, 11-17, 20 and 22 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter of the invention. More particularly, the Examiner has objected to the use of trademarks/trade names to identify certain ingredients in these claims. Applicant has amended the claims to replace the trademarks/trade names with the generic

names for these ingredients. In view of these amendments, applicant submits that claims 9, 11-17, 20 and 22 now fully comply with all of the requirements of 35 U.S.C. § 112, second paragraph. Withdrawal of this rejection is respectfully requested.

Claim 18 has been rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,976,607 to Higgins ("*Higgins I*"). Applicant submits that the cancellation of claim 18 renders this rejection moot.

Claims 1-4, 6, 7, 12, 13 and 16 have been rejected under 35 U.S.C. § 103(a) as being obvious over *Higgins I* in view of U.S. Patent No. 5,141,759 to Sloan et al. ("*Sloan*"). Applicant respectfully traverses this rejection in view of the amendments set forth above and for the reasons which follow.

Applicant initially notes the requirement in claim 1 for

"introducing the coated articles into a hot air environment." (emphasis added)

Applicant submits that neither *Higgins I* nor *Sloan*, either alone or in combination, teaches or suggests this limitation.

Higgins I is directed to a water-dispersible coating for use in preparing fried foods. (*Higgins I*, title and abstract.) The reference teaches a method in which potatoes are processed into potato articles having a desired size and shape, blanched, dried, dipped in a solution containing sodium acid pyrophosphate, oven dried, coated with an emulsion containing starch, oil, salt and coloring, and fried in oil. (*Higgins I*, col. 7 ll. 37-51.) While acknowledging that *Higgins I* does not teach the step of introducing the coated potato articles into a hot air environment, the Examiner has contended that *Sloan* provides this missing teaching. Applicant disagrees.

Turning to the *Sloan* reference, applicant notes that the reference teaches that, following the blanching step and an

optional immersion in a brine solution, the potato strips are air dried in a conventional air dryer. (*Sloan*, col. 3 ll. 3 and 18-20; col. 5 ll. 34-37; and col. 6, ll. 37-41.) Following air drying, the strips are coated with an emulsion. (*Sloan*, col. 3 ll. 25-28; col. 5 ll. 38-39; and col. 6 ll. 42-43.) Subsequent to the coating step, the coated potato strips are **parfried**. (*Sloan*, col. 4 ll. 63-68; col. 5 ll. 44-47; and col. 6 ll. 49-53.) It is thus clear that *Sloan* teaches an air-drying step which **precedes** the coating step. Furthermore, following the coating step, *Sloan* fails to disclose an air-drying step, but rather teaches the step of parfrying the coated potato articles. Hence, *Sloan* fails to teach the above-noted requirement in claim 1 of introducing the coated articles into a hot air environment.

Moreover, applicant notes that the present invention is intended to reduce the relatively high fat content of potato products produced using one or more oil frying steps. (See paragraph [0002] of the present application.) As noted above, *Higgins I* is clearly directed to fat-fried foods. Applicant submits that one seeking to improve upon the process of *Higgins I* in order to reduce the relatively high fat content of the final product would not turn to *Sloan*. In that regard, one seeking to reduce the fat content of the potato articles of *Higgins I* would desire to eliminate the step of frying the coated potato articles in oil. However, *Sloan* also teaches the step of frying the coated potato articles in oil. As such, the teachings of *Sloan* would provide no improvement to the product produced by the process of *Higgins I*.

Applicant submits that one seeking to produce coated potato articles having a relatively low fat content would not look to *Higgins I* at all since the coatings therein are specifically tailored for fat-fried foods. That is, one intending to cook coated potato articles in a hot air environment would have no reason to turn to the emulsion

coatings disclosed in *Higgins I* since those coatings were specifically developed for products which are to be fried.

In view of the foregoing, applicant submits that claim 1 patentably distinguishes over *Higgins I* and *Sloan*, either alone or in the combination which the Examiner contends can be made therefrom. Accordingly, applicant submits that claim 1 is in condition for immediate allowance.

Claims 2-3, 6, 7, 12, 13 and 16 depend either directly or indirectly from claim 1 and include all of the limitations of that claim. For at least this reason, applicant believes these dependent claims to also distinguish over the combination of *Higgins I* and *Sloan* such as to warrant their immediate allowance, which action is respectfully requested.

Furthermore, with respect to claim 7, applicant notes the requirement that the step of drying the dipped potato articles is carried out at ambient temperature. Neither *Higgins I* nor *Sloan* teaches this step. Rather, *Higgins I* teaches that the dipped potatoes are oven dried (*Higgins I*, col. 7 ll. 45-46), with the oven-drying step being conducted at a temperature well above ambient. (*Higgins I*, col. 8 ll. 2-5.) Similarly, *Sloan* teaches that the dipped potatoes are dried at a temperature well above ambient. (*Sloan*, col. 3 ll. 18-24; col. 5 ll. 34-37; and col. 6 ll. 37-41.) Hence, this is an additional reason why claim 7 is believed to patentably distinguish over *Higgins I* and *Sloan*.

Claims 12 and 13 require the further step of drying the coated articles prior to introducing the coated articles into the hot air environment. Both *Higgins I* and *Sloan* fail to teach this step. More particularly, *Higgins I* teaches a frying step immediately after the coating step. (*Higgins I*, col. 7 ll. 48-54; and col. 8 ll. 28-31.) Similarly, *Sloan* teaches that following the coating process, the potatoes are drained and parfried. (*Sloan*, col. 4 ll. 55-68; col. 5 ll. 38-47; and col. 6

11. 43-54.) For this additional reason, claims 12 and 13 are believed to patentably distinguish over both *Higgins I* and *Sloan*, and any combination which the Examiner contends may be made therefrom.

Claim 5 has been rejected under 35 U.S.C. § 103(a) as being obvious over *Higgins I* and *Sloan*, and further in view of U.S. Patent No. 5,279,840 to Baisier et al. ("*Baisier*"). This rejection is respectfully traversed in view of the above amendments and arguments, and for the reasons set forth below.

Applicant would initially reiterate the contentions set forth above with regard to the clear deficiencies of both *Higgins I* and *Sloan*, and in particular, in their attempted combination. *Baisier* fails to overcome these deficiencies. Accordingly, applicant submits that claim 5 patentably distinguishes over *Higgins I* in view of *Sloan* and *Baisier* such as to warrant its immediate allowance. In view of the foregoing, withdrawal of this rejection is respectfully requested.

Claims 8 and 9 have been rejected under 35 U.S.C. § 103(a) as being obvious over *Higgins I* and *Sloan*, and further in view of U.S. Patent No. 5,139,800 to Anderson et al. ("*Anderson*"). Applicant respectfully traverses this rejection in view of the foregoing amendments and arguments, and for the reasons set forth below.

Applicant again reiterates the contentions set forth above with regard to the clear deficiencies of both *Higgins I* and *Sloan*, and in their attempted combination. *Anderson* fails to overcome these deficiencies. Moreover, the Examiner's rejection is based upon a picking and choosing of ingredients from different references based solely on the fact that they are ingredients used in food processing. However, *Higgins I* is specifically directed to coatings for use with products that are to be fried in oil, while *Anderson* is directed to coatings for

foods that are to be heated in an oven or microwave. (*Anderson*, col. 3 ll. 7-8.) Applicant submits that one seeking to modify the coating of *Higgins I* would not look to *Anderson* because the coatings therein are directed to an entirely different cooking method, and therefore would have different properties. For this reason, applicant submits that the combination of *Higgins I*, *Sloan* and *Anderson* is improper and would not lead to the combination of ingredients in claims 8 and 9. Applicant therefore believes that claims 8 and 9 patentably distinguish over *Higgins I* in view of *Sloan* and *Anderson* such as to warrant their immediate allowance. In view of the foregoing, withdrawal of this rejection is respectfully requested.

Claim 10 has been rejected under 35 U.S.C. § 103(a) as being obvious over *Higgins I* and *Sloan*, and further in view of U.S. Patent No. 5,753,286 to Higgins et al. ("*Higgins II*"). Applicant respectfully traverses this rejection on the basis of the amendments and arguments set forth below and for the reasons which follow.

Applicant would again repeat the contentions set forth above with regard to the clear deficiencies of *Higgins I* and *Sloan*, and any combination which can be made therefrom. *Higgins II* is also directed to processes in which the food product is fried after the coating step (*Higgins II*, col. 6 ll. 46-65), and therefore plainly fails to overcome the deficiencies of these other references. Additionally, applicant again asserts that the Examiner's rejection is based upon a picking and choosing of ingredients from multiple references based solely on the fact that they are ingredients used in food processing. Although *Higgins I*, *Sloan* and *Higgins II* are all directed to coatings for use with products that are to be fried in oil, they are all processed somewhat differently. Moreover, applicant's coated potato articles are intended to be heated in air, not in oil. For that reason, applicant contends that those skilled in the

art would not turn to either *Higgins I*, *Sloan* or *Higgins II* for a teaching of ingredients to be added to the coating since the manner of cooking will invariably have an impact on the ingredients to be included in the coating. Applicant therefore submits that the subject matter of claim 10 would not be obvious from the combined teachings of *Higgins I*, *Sloan* and *Higgins II*, and that claim 10 patentably distinguishes over these references such as to warrant its immediate allowance. Accordingly, withdrawal of this rejection is respectfully requested.

Claim 11 has been rejected under 35 U.S.C. § 103(a) as being obvious over *Higgins I*, *Sloan* and *Higgins II*, and further in view of *Anderson*. This rejection is respectfully traversed in view of the above amendments and arguments, and for the reasons which follow.

Applicant repeats the comments set forth above with regard to the clear deficiencies of *Higgins I*, *Sloan* and *Higgins II*, and any combination which can be made therefrom. *Anderson* manifestly fails to overcome these deficiencies. Moreover, for the reasons discussed above, applicant submits that it is improper to combine the teachings of *Anderson*, whose products are cooked in an oven or microwave, with the teachings of *Higgins I*, *Sloan* and *Higgins II*, whose products are fried. Applicant therefore submits that claim 11 would not be obvious from the combined teachings of *Higgins I*, *Sloan*, *Higgins II* and *Anderson*, and that claim 11 patentably distinguishes over these references, including any combination which the Examiner contends can be made therefrom. Withdrawal of the rejection is respectfully requested.

Claims 14 and 15 have been rejected under 35 U.S.C. § 103(a) as being obvious over *Higgins I* in view of *Sloan* and further in view of "Frying: Improving Quality", The Manufacture of Pre-Fried Potato Products by Keijbets ("Keijbets"). Applicant respectfully traverses this rejection in view of the

foregoing amendments and arguments and for the reasons set forth below.

Applicant yet again reiterates the comments set forth above with respect to the clear deficiencies of *Higgins I* and *Sloan*, and in their attempted combination. *Keijbets* fails to overcome these deficiencies. More particularly, applicant notes that claims 14 and 15 require the **coated** articles to be dried at a specified temperature. *Keijbets*, in discussing the manufacture of coated potato products at page 204, states that, "once coated, the batter is set by frying the product." Nothing in *Keijbets* suggests that the coated potato articles are to be air dried at a specified temperature. The portion of *Keijbets* referred to by the Examiner at page 311 refers to the manufacture of tortilla chips which do not have a coating that may be subjected to a drying step. Accordingly, the portion of *Keijbets* referenced by the Examiner is totally inapplicable to the present invention. In view of the foregoing, applicant submits that claims 14 and 15 patentably distinguish over *Higgins I* in view of *Sloan* and *Keijbets* such as to warrant their immediate allowance. Withdrawal of this rejection is respectfully requested.

Claim 17 has been rejected under 35 U.S.C. § 103(a) as obvious over *Higgins I* in view of *Sloan*, and further in view of U.S. Patent No. 6,132,785 to Collinge et al. ("*Collinge*"). This rejection is respectfully traversed in view of the amendments and comments set forth above, and for the reasons which follow.

Applicant again repeats the comments set forth above with regard to the manifest deficiencies of *Higgins I* and *Sloan*, and in their attempted combination. *Collinge* fails to overcome these deficiencies. Applicant therefore submits that claim 17 patentably distinguishes over *Higgins I*, *Sloan* and *Collinge* such as to warrant its allowance. Withdrawal of the rejection is respectfully requested.

Claims 19 and 20 have been rejected under 35 U.S.C. § 103(a) as being obvious over *Higgins I* in view of *Anderson*. Claim 19 has been cancelled. The rejection of claim 20 is respectfully traversed.

Applicant reiterates the comments set forth above with regard to the manifest deficiencies of *Higgins I*. *Anderson* fails to overcome those deficiencies. As explained above, *Higgins I* is directed to foods that are to be fried in oil, and the coatings therein are specifically developed for use in such systems. *Anderson*, on the other hand, is directed to foods which are to be heated in an oven or in a microwave. As such, the coatings in *Anderson* are tailored for that specific purpose. Because of the manifest differences in the cooking techniques the respective patentees were concerned with, one seeking to improve upon the products of *Higgins I* would not look to the teachings of *Anderson*. Furthermore, the Examiner's contention that the teachings of these references can be combined simply because they disclose ingredients used in food processing is an insufficient basis for combining these teachings. In view of the foregoing, applicant submits that claim 20 would not be obvious from the teachings of *Higgins I* or *Anderson*, or any combination which can be made therefrom. For these reasons, applicant contends that claim 20 patentably distinguishes over these references such as to warrant its immediate allowance, which action is respectfully requested.

Claim 21 has been rejected as being unpatentable over *Higgins I* and further in view of *Higgins II*. Applicant submits that the cancellation of claim 21 renders this rejection moot.

Claim 22 has been rejected under 35 U.S.C. § 103(a) as being obvious over *Higgins I*, *Sloan* and *Higgins II*, and further in view of *Anderson*. Applicant respectfully traverses this rejection on the basis of the amendments and arguments set forth above and for the further reasons which follow.

Applicant again repeats the comments set forth above with regard to the manifest deficiencies of *Higgins I*, *Sloan* and *Higgins II* and any combination which the Examiner contends can be made therefrom. *Anderson* plainly fails to overcome those deficiencies. Accordingly, applicant submits that claim 22 patentably distinguishes over these references and is in condition for allowance. Withdrawal of the rejection is respectfully requested.

As it is believed that all of the rejections set forth in the Official Action have been fully met, favorable reconsideration and allowance are earnestly solicited. If, however, for any reason the Examiner does not believe that such action can be taken at this time, it is respectfully requested that she telephone applicant's attorney at (908) 654-5000 in order to overcome any additional objections which she might have.

If there are any additional charges in connection with this requested amendment, the Examiner is authorized to charge Deposit Account No. 12-1095 therefor.

Dated: February 19, 2009 Respectfully submitted,

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ABSTRACT OF THE DISCLOSURE

~~The present invention provides a~~ A method of preparing a potato-based food product ~~comprising the steps of:~~ includes processing potatoes into potato articles having a desired size and shape, blanching ~~said~~ said the potato articles, dipping ~~said~~ said the blanched potato articles in a solution to prevent non-enzymic oxidation of the potato articles, drying ~~said~~ said the potato articles, coating ~~said~~ said the potato articles in an emulsion containing starch, oil, salt and colouring to form coated articles, introducing ~~said~~ said the coated articles into a hot air environment 7, and removing ~~said~~ said the coated articles from ~~said~~ said the hot air environment.

Potato Based Food Product

[0001] The present invention relates to the preparation of a food product and in particular to the preparation of a potato-based food product.

[0002] One method of preparing par-cooked potato product, such as chips or fries, is to wash, cut and blanch the raw potato, dry the blanched potato pieces by about 10% and par fry the pieces in oil for around 3 minutes at a temperature of about 140 °C. The chips are subsequently cooled and bagged ready for chilling or freezing. The par-cooked chips or fries are typically fried in oil once again by the end consumer to complete the cooking process. This method permits the rapid preparation of chips or fries by the end user, which fries or chips have an acceptable taste and mouth feel. The oil frying steps results in chips or fries with a relatively high fat content which it would be desirable to reduce.

[0003] According to the present invention there is provided a method of preparing a potato-based food product, the method comprising the steps of:

processing potatoes into potato articles having a desired size and shape,

blanching said potato articles,

dipping said blanched potato articles in a solution to prevent non-enzymic oxidation of the potato articles,

drying said potato articles,

coating said potato articles in an emulsion containing starch, oil, salt and colouring,

introducing said coated articles into a hot air environment, and

removing said articles from said hot air environment.

[0004] The step of processing said potatoes typically comprises steam peeling, trimming to remove any defects and cutting to a desired size. Preferably, the potatoes are cut into elongate sticks known variously as chips or fries. Chips

typically have a substantially square cross-section of between 8 mm ~~to~~and 15 mm. In a preferred embodiment the potatoes are cut into a chip size of 11.2 mm by 11.2 mm (15/32 of an inch by 15/32 of an inch).

[0005] The step of blanching the articles preferably comprises immersing the potato articles in a heated water bath for a period of time. The blanching temperature may be in the range of 70 °C to 95 °C. The blanching time may be in the range of 5 minutes to 20 minutes. It will be appreciated that the blanching temperature and time will be at least partially dependent on such factors as the potato variety and the size of the potato articles.

[0006] The step of dipping said blanched potato articles in a solution to prevent non-enzymic oxidation of the potato articles may comprise immersing the articles in a ~~S~~sodium ~~A~~acid ~~P~~ppyrophosphate solution. The solution may comprise 1% ~~S~~sodium ~~A~~acid ~~P~~ppyrophosphate. The solution may be at a temperature of 65 °C and the articles may be immersed for a time period of around 60 seconds.

[0007] The step of drying the blanched and dipped potato articles may in one embodiment comprise introducing the articles into an elevated temperature environment. In such an embodiment the articles may be introduced into a warm air environment such as a drying oven. The elevated temperature may be in the range of 90 °C to 120 °C. The articles may be dried for a time period of around 4 minutes and may during this drying step experience a drying weight loss of around 4.5%.

[0008] Alternatively, the blanched and dipped potato articles may be allowed to dry at ambient temperature. In such an embodiment the articles may be allowed to dry at ambient temperature for around ten minutes.

[0009] The step of coating the articles may be achieved by any suitable means such as, for example, an appropriately configured enrobing device. The starch~~---~~containing emulsion

also includes oil and salt. The emulsion may include more than one kind of starch. The emulsion preferably also includes a colouring. The colouring may preferably include paprika.

[0010] In one embodiment the emulsion may comprise a mixture comprising water, oil, starch, colouring, emulsifier, stabilizer and salt. In such an embodiment the oil may be sunflower oil and the starch Hylon V11 starch refined from high amylose maize. The colouring may comprise turmeric and paprika. The emulsifier may comprise Hamultop 391 whey protein concentrate and buttermilk powder emulsifier and ~~the stabilizer~~ H0w 1 guar gum and xanthan gum stabilizer. The emulsion in such an embodiment may ~~comprise~~ the above—referenced components in the following proportions:

Water	53.00% - 60.00%
Sunflower Oil	24.00% - 28.00%
Starch (Hylon V11)	10.00% - 12.00%
Turmeric	0.01% - 0.10%
Liquid Paprika	0.01% - 0.10%
Hamultop 391 emulsifier	0.80% - 1.00%
H0w 1 stabiliser	0.10% - 0.30%
Salt	4.00% - 6.00%

[0011] In an alternative embodiment the emulsion may comprise a mixture comprising water, oil, starch, flour, dextrin, gum, ~~S~~sodium ~~B~~bicarbonate, salt, colouring, oil, ~~S~~sodium ~~A~~acid ~~P~~pyrophosphate and dextrose. The starch element may comprise more than one type of starch. In such an embodiment the starch element of the emulsion may comprise a combination of potato starch and maize starch. The gum may comprise a combination of more than one gum. In such an embodiment the gum may comprise a combination of ~~G~~guar gum and ~~X~~xantha~~n~~ gum. The colouring may comprise a combination of ~~T~~turmeric and ~~P~~paprika. More specifically, the emulsion may comprise a combination of modified potato starch, rice flour, potato dextrin, maize starch, xantha~~n~~ gum, sodium

bicarbonate, ~~pe~~Puron AG (sodium acid pyrophosphate), salt, turmeric extract powder, paprika oleoresin, vegetable oil, dextrose and guar gum. The emulsion in such an embodiment may comprises the above—referenced components in the following proportions:

Water	48.00% - 54.00%
Sunflower oil	13.00% - 16.00%
Modified Potato Starch E1412	9.00% - 11.00%
Rice Flour	5.00% - 7.00%
Potato Dextrin	9.00% - 11.00%
Maize Starch	4.00% - 6.00%
Xanthan Gum	0.01% - 0.10%
Sodium Bicarbonate	0.30% - 0.40%
Puron AG	0.40% - 0.50%
Salt	1.00% - 2.00%
Turmeric Extract Powder	0.01% - 0.10%
Paprika Oleoresin	0.01% - 0.10%
Vegetable Oil	0.01% - 0.10%
Dextrose	0.30% - 0.40%
Guar Gum	0.01% - 0.10%

[0012] The coating of the articles may be quantified with reference to the pick-up percentage by weight of the emulsion by the potato articles. The pick up percentage may be in the range of 5% to 20%. More preferably, the pick up percentage may be in the range of 6% to 17%.

[0013] The method may optionally include the additional step of drying the potato articles for a second time after they have been coated in the emulsion. This second drying step may comprise introducing the coated articles into a warm air environment. The articles may be dried at a temperature ~~of~~ between 100 °C and 130 °C. More preferably, the coated articles may be dried at a temperature ~~of~~ between 105 °C

and 120 °C. In one embodiment the articles may be dried for a period of ~~between~~ 20 to 35 minutes. In an alternative embodiment the articles may be dried for 20 minutes. The second drying step may be quantified with reference to the weight loss of the coated articles during drying thereof. ~~†~~The drying loss by weight may be in the ~~region~~range of 10% to 25%, and more preferably in the range of 12% to 20%.

[0014] The final step of introducing the coated articles into a hot air environment may comprise~~s~~ introducing the coated articles into an impingement oven. The hot air environment may have a temperature ~~of~~ ~~between~~ 240 °C ~~to~~and 285 °C. The coated articles may be kept in the environment for a period of ~~between~~ 3 to 6 minutes. Again, this heating step may be quantified with reference to the weight loss of the coated articles. Preferably, the articles experience a weight loss of ~~between~~ 20% to 27%.

[0015] According to a second aspect of the present invention there is provided a coating for a potato article, the coating comprising an emulsion containing oil, starch, salt and colouring.

[0016] In one embodiment the emulsion may comprise a mixture comprising water, oil, starch, colouring, emulsifier, stabilizer and salt. In such an embodiment the oil may be sunflower oil and the starch Hylon V11 maize starch. The colouring may comprise turmeric and paprika. The emulsifier may comprise Hamultop 391 emulsifier and ~~the stabilizer~~ H0w 1 gum stabilizer. The emulsion in such an embodiment may comprises the abovereferenced components in the following proportions:

Water	53.00% - 60.00%
Sunflower Oil	24.00% - 28.00%
Starch (Hylon V11)	10.00% - 12.00%
<u>Turmeric</u>	0.01% - 0.10%
Liquid Paprika	0.01% - 0.10%

Hamultop 391 emulsifier	0.80% - 1.00%
H0w 1 stabiliser	0.10% - 0.30%
Salt	4.00% - 6.00%

[0017] In an alternative embodiment the emulsion may comprise a mixture comprising water, oil, starch, flour, dextrin, gum, ~~S~~sodium ~~B~~bicarbonate, salt, colouring, oil, ~~S~~sodium ~~A~~acid ~~P~~pyrophosphate and dextrose. The starch element may comprise more than one type of starch. In such an embodiment the starch element of the emulsion may comprise a combination of potato starch and maize starch. The gum may comprise a combination of more than one gum. In such an embodiment the gum may comprise a combination of ~~G~~guar gum and ~~X~~xanthan gum. The colouring may comprise a combination of ~~T~~turmeric and ~~P~~paprika. More specifically, the emulsion may comprise a combination of modified potato starch, rice flour, potato dextrin, maize starch, xanthan gum, sodium bicarbonate, ~~P~~Puron AG (sodium acid pyrophosphate), salt, turmeric extract powder, paprika oleoresin, vegetable oil, dextrose and guar gum. The emulsion in such an embodiment may comprises the above-referenced components in the following proportions:

Water	48.00% - 54.00%
Sunflower oil	13.00% - 16.00%
Modified Potato Starch E1412	9.00% - 11.00%
Rice Flour	5.00% - 7.00%
Potato Dextrin	9.00% - 11.00%
Maize Starch	4.00% - 6.00%
Xanthan Gum	0.01% - 0.10%
Sodium Bicarbonate	0.30% - 0.40%
Puron AG	0.40% - 0.50%
Salt	1.00% - 2.00%
Turmeric Extract Powder	0.01% - 0.10%
Paprika Oleoresin	0.01% - 0.10%
Vegetable Oil	0.01% - 0.10%
Dextrose	0.30% - 0.40%

Guar Gum

0.01% - 0.10%

[0018] Embodiments of the present invention will now be described by way of illustrative examples.

EXAMPLE 1

[0019] Maris Piper potatoes are steam peeled, trimmed to remove any defects and cut into a desired chip size. Typical examples being chips having a cross-section of 11.2 mm by 11.2 mm (15/32 of an inch by 15/32 of an inch).

[0020] The chips are then blanched in water at a temperature of around 75°C for 6 minutes.

[0021] After blanching the chips are dipped in an aqueous solution containing 1% Puron for 60 seconds at a temperature of around 65°C. Puron is the trade name for ~~S~~sodium ~~A~~acid ~~P~~pyrophosphate and is used to prevent non-enzymic oxidation of the chips.

[0022] The dipped chips are then dried in an elevated temperature environment at around 110°C. During this drying step the chips experience a drying loss of around 4.5%, which is to say that the moisture loss during drying of the chips is ascertainable as a 4.5% reduction in the ~~pre-drying~~ step weight.

[0023] The dried chips are then coated with a batter emulsion having the following composition:

Water	53.00% - 60.00%
Sunflower Oil	24.00% - 28.00%
Starch (Hylon V11)	10.00% - 12.00%
<u>Tur</u> meric	0.01% - 0.10%
Liquid Paprika	0.01% - 0.10%
Hamultop 391 emulsifier	0.80% - 1.00%
H0w 1 stabiliser	0.10% - 0.30%
Salt	4.00% - 6.00%

[0024] Coating of the chips is achieved using a batter enrober.

[0025] The coated chips are then dried at a temperature of around 120°C. During this second drying step the chips experience a drying loss of 12%.

[0026] After the second drying ~~the~~ step the coated chips are ~~then~~ partially cooked in an impingement oven at a temperature ~~of~~ between 250°C ~~to~~ and 285°C. During this ~~impingement~~ cooking step the chips experience an impingement loss of between 24% and 27%. The par-cooked chips are then frozen and packaged ready for supply to an end consumer.

[0027] The end consumer completes the cooking process by heating the chips from frozen for between 15 minutes and 18 minutes at a temperature of around 220°C.

EXAMPLE 2

[0028] As in the example given above, the potatoes are peeled, trimmed and cut into a chip size ~~+~~ having a cross-section of 11.2 mm by 11.2 mm (15/32 of an inch by 15/32 of an inch).

[0029] The chips are then blanched in water at a temperature of around 85°C for 13 minutes.

[0030] After blanching the chips are dipped in an aqueous solution containing 1% Puron for 60 seconds at a temperature of around 65°C.

[0031] The dipped chips are then dried in an ambient temperature environment.

[0032] The dried chips are then enrobed with a batter emulsion having the following composition:

Water	48.00% - 54.00%
Sunflower oil	13.00% - 16.00%
Modified Potato Starch E1412	9.00% - 11.00%
Rice Flour	5.00% - 7.00%
Potato Dextrin	9.00% - 11.00%
Maize Starch	4.00% - 6.00%
Xanthan Gum	0.01% - 0.10%
Sodium Bicarbonate	0.30% - 0.40%
Puron AG	0.40% - 0.50%
Salt	1.00% - 2.00%
Turmeric Extract Powder	0.01% - 0.10%
Paprika Oleoresin	0.01% - 0.10%
Vegetable Oil	0.01% - 0.10%
Dextrose	0.30% - 0.40%
Guar Gum	0.01% - 0.10%

[0033] After the second drying ~~the~~ step the coated chips are ~~then~~ partially cooked in an impingement oven at a temperature of around 285°C. During this ~~impingement~~ cooking step the chips experience an impingement loss of 21.8%.

[0034] The par-cooked chips are then frozen and packaged ready for supply to an end consumer.

[0035] The end consumer completes the cooking process by heating the chips from frozen for 15 minutes at a temperature of around 220°C.